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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,698	01/08/2002	Norbert Taufenbach	6056-000040	9556

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EXAMINER

MENEFEE, JAMES A

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/831,698

Applicant(s)

TAUFENBACH, NORBERT

Examiner

James A. Menefee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-52 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 30-52 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

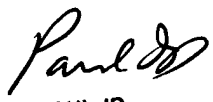
- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10, 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____


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DETAILED ACTION

Response to Amendment

In response to the three preliminary amendments, filed 11 May 2001, 29 January 2002, and 29 September 2002, the following is the end result of the three preliminary amendments: claims 1-29 are cancelled, claims 30-52 are added, and the specification is amended. Claims 30-52 are pending.

Specification

The disclosure is objected to because of the following informalities: On page 7, line 16 as originally filed, the term "end pieces 24" should be changed to "end pieces 14" to be consistent with the earlier use of 14 for the end pieces.

Appropriate correction is required.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

Fig. 1: 2, 3, 30, 32, 56, 58, 60, 62, 110

Fig. 2: 32, 55

Fig. 3: 12', 14', 16', 18', 64, 66, 68, 70, 72, 74, 76, 78, 80, 82

Fig. 4: 5, 12', 14', 16', 18', 72, 74, 80, 82, 84, 86

Fig. 5: 32, 86', 88, 90, 92

Fig. 6: 10a, 10b, 14', 26a, 26b, 68, 70, 80, 82, 94, 96, 98, 100, 102, 103, 104

Fig. 7: 10a, 10b, 10c, 12', 14', 26c, 68, 70

Further, the drawings do not correctly represent the invention when taken in conjunction with the specification. For example, reference sign 20 is supposed to represent adjusting screws on the end pieces; sign 40 is supposed to represent cooling channels; sign 54 is supposed to represent flexible bellows. None of these parts, as shown in the drawings, show such elements. These are not the only incorrect reference signs; many of them are incorrect. The drawings appear to have been taken from a different application, as they have EP 0 305 893 A2 stamped on them (see also US 4,939,738, cited herein). These drawings are not relevant to the present invention as the reference signs are unclear—a person reading the specification and looking at the drawings will not understand what is being explained due to the incorrect location of various signs. The applicant must file new drawings having reference signs in the appropriate locations so that one will not be misled by the drawings.

As noted above, the drawings are stamped with “EP 0 305 893 A2”. This must be removed.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 34 is objected to because of the following informalities: “o” at the end of line one should be replaced by “of”. Appropriate correction is required.

Double Patenting

Applicant is advised that should claims 30, 40, or 48 be found allowable, claims 32, 42, and 49 respectively will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

In this case, claims 48 and 49 are clearly identical. Claims 40 and 42 are identical except for one depending on claim 30 and the other on claim 32. Claims 30 and 32 are found to both cover the same thing despite a slight difference in wording. The only difference is that in claim 30 the “electrodes are each supported”, while in claim 32 the “electrodes each are held” at opposing ends of the tubular housing.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 30-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 30-32 each include the limitations that “the electrodes and the mirrors are adjustable relative to one another”. This limitation is not clear. In the context of the invention,

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the electrodes and the mirrors are indeed adjustable, however the adjustment is such that when one of the electrodes or mirrors is adjusted the other is also adjusted; i.e. the elements are adjustable, but the locations of the electrodes and the mirrors, relative to one another, do not change. This is implied in that the electrodes and mirrors are made in a one-piece construction or are bolted together as disclosed. However, the limitation that "the electrodes and the mirrors are adjustable relative to one another" implies that the locations of each may be changed relative to one another, the exact opposite of what is disclosed.

Claims 33-37, 43-44, and 47-49 are rejected because there is insufficient antecedent basis in the claims. The claims either recite or include by dependency the limitation "the end pieces". Further, claim 36 recites the limitation "the adjusting elements". There is insufficient antecedent basis for these limitations in the claims.

Regarding claims 47-49, it is further unclear how an end piece that is defining the housing will be separate from the housing, i.e. attached to the housing through a flexible bearing.

Claims 50-52 depend on previously cancelled claim 1. The claims have been examined as depending on claim 30. Correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 30-33, 37-46, and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opower (US 4,939,738) in view of Friede et al. (US 5,751,750).

Regarding claims 30-32, Opower discloses a CO₂ slab laser having a gas-filled chamber defined by a tubular housing, with at least two electrodes that extend into the tubular housing, said electrodes overlapping one another to form a discharge chamber, and resonator mirrors provided within said housing, characterized in that said electrodes are each supported or held at the opposite ends of said tubular housing, and said mirrors are supported in stationary relationship in one piece construction with said electrodes. It is not provided that the electrodes and mirrors are adjustable with one another. However, it is inherent that, since the electrodes and mirrors are formed in a one piece construction having a stationary relationship relative to each other, then if one of the electrodes or mirrors is made adjustable than the other of the electrodes or mirrors will be adjusted also. Friede teaches that it is known in the art in a similar laser system to adjust the mirrors of the laser system. It would have been obvious to one skilled in the art that the mirrors (and thus the electrodes) of Opower's system may be made adjustable so that the path length in the resonator may be stabilized to prevent distortion of the wavelength by deformation of the optical elements, as taught by Friede.

Regarding claim 33, the electrodes are designed in one piece with the mirrors. As shown above, it is not clear what applicant means by "end pieces" in this claim, as there is no antecedent basis.

Regarding claim 37, the electrodes are held by end pieces 12', 14', sealing off the housing.

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Regarding claims 38-39, the mirrors may be designed in one piece with end pieces 12', 14' that form a part of the housing.

Regarding claims 40-46, the tubular housing may be designed in two parts 10a, 10b that are interconnected. Further, if the system is to be adjustable as taught by Friede above, then the two parts will be adjustable relative to one another.

Regarding claim 50, since the electrodes and the mirrors are in a one piece construction, it is inherent that adjusting elements that Friede teaches will act on the mirrors will also act on the electrodes.

Regarding claim 51, it is shown in Opower Fig. 7 that the housing may be cylindrical in sections, and thus the electrodes formed on the outside must form a circular segment whose radius is less than the inside radius of the housing.

Regarding claim 52, the electrodes and mirrors are fixed relative to one another after any adjustment has taken place.

Claims 34-36 and 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opower and Friede as applied to the claims above, and further in view of Hochuli (US 3,719,900).

The combination of Opower and Friede teaches that the cavity length is adjustable, however, does not teach the combination of elements in these claims. Hochuli teaches that the cavity length may be adjusted using piezoelectric crystals and flexible bearings, such as a bellows. It would have been obvious to one skilled in the art to use these means of adjusting as

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they are known to be used for adjusting the cavity path length, thus adjusting the frequency, as taught by Hochuli.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art discloses gas slab lasers, similarly to the present invention. However, in these references, the electrodes and/or the mirrors are adjustable independently of each other.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (703) 605-4367. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



JM
August 29, 2003



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